

ABSTRACT

A novel method and apparatus for generating transmit adaptive antenna weights with nulling using binary gradient feedback is disclosed. The method and apparatus of the present invention allows a communication system to provide adequate power to a desired receiver and reduce interference to proximate receivers. The method and apparatus of the present invention generates transmit adaptive antenna weights that direct (or "steer") nulling to proximate receivers, and thus reduce interference to these proximate receivers. The generating transmit adaptive antenna weights method and apparatus utilizes a feedback algorithm that tracks a normalized weight vector toward a maximum of an inverse cost function. The method and apparatus of the present invention improves the performance and capacity of a CDMA system. Specifically, the present inventive method and apparatus decreases the overall interference in a communication system.